

No. 840,591.

PATENTED JAN. 8, 1907.

E. SPENCER.
HYDROCARBON BURNER.
APPLICATION FILED DEC. 9, 1905.

Fig. 1.

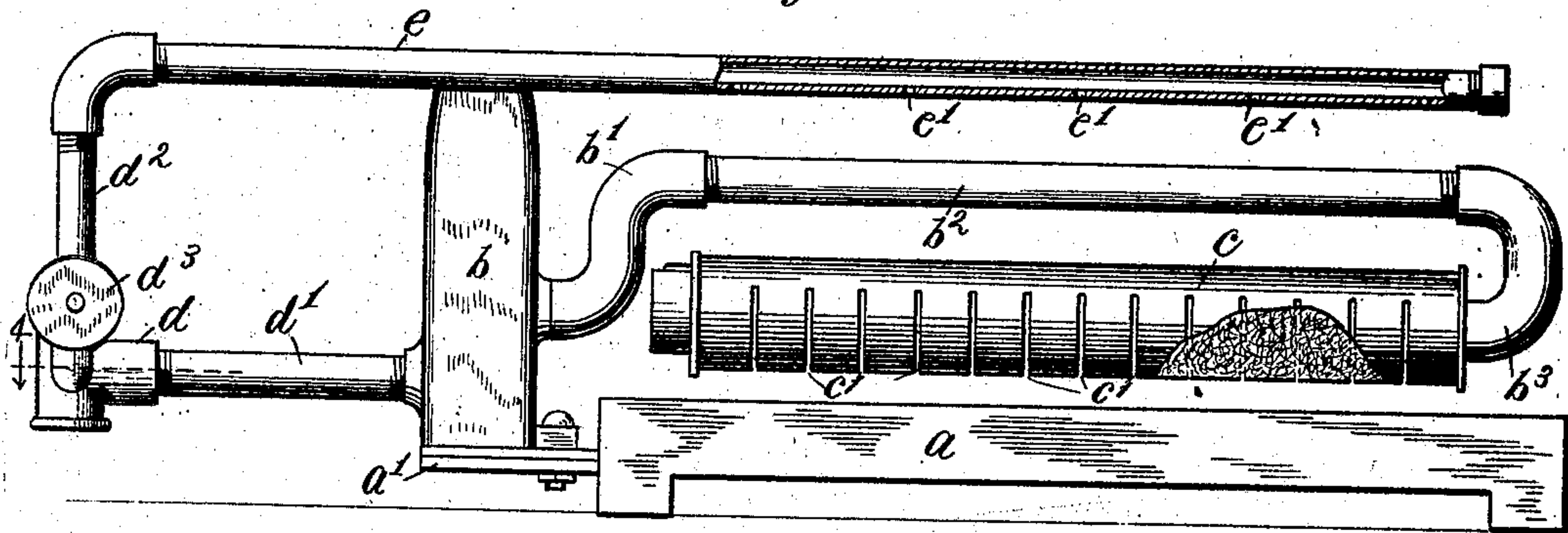


Fig. 2.

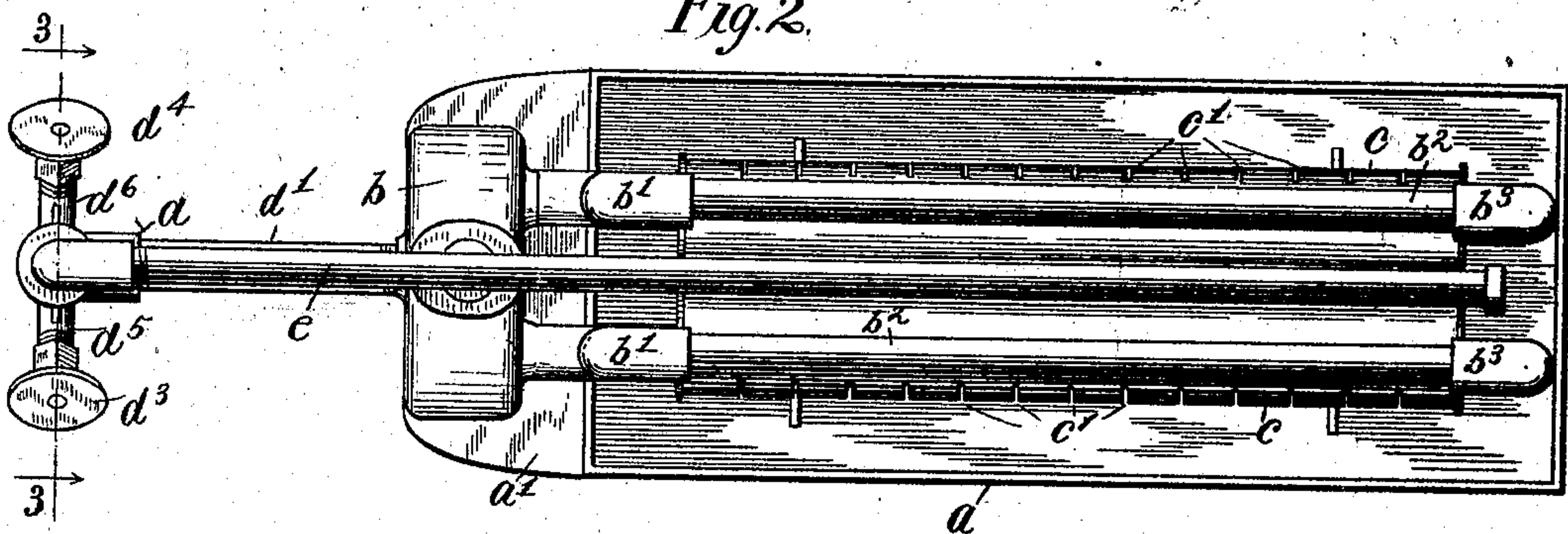


Fig. 3.

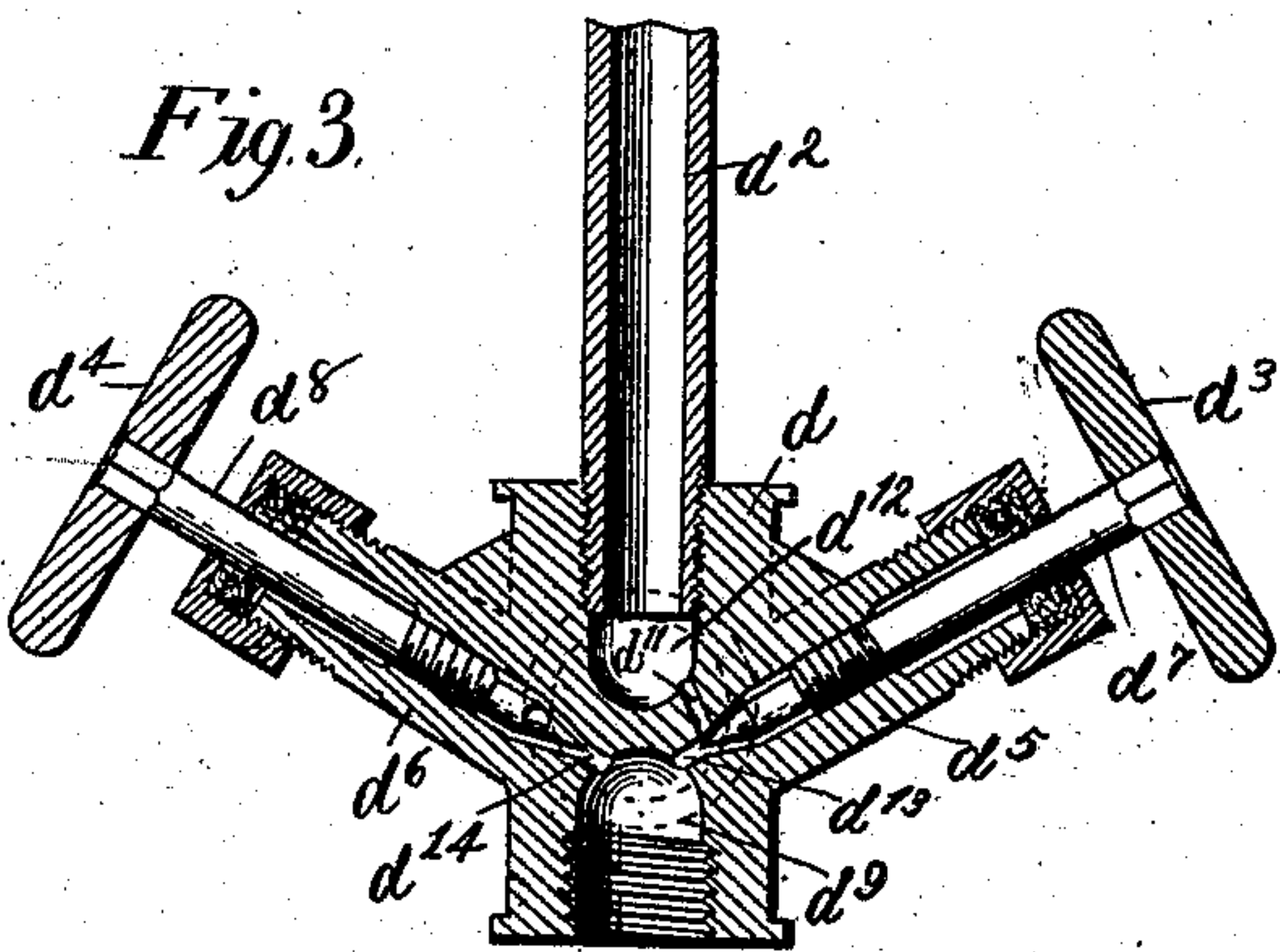
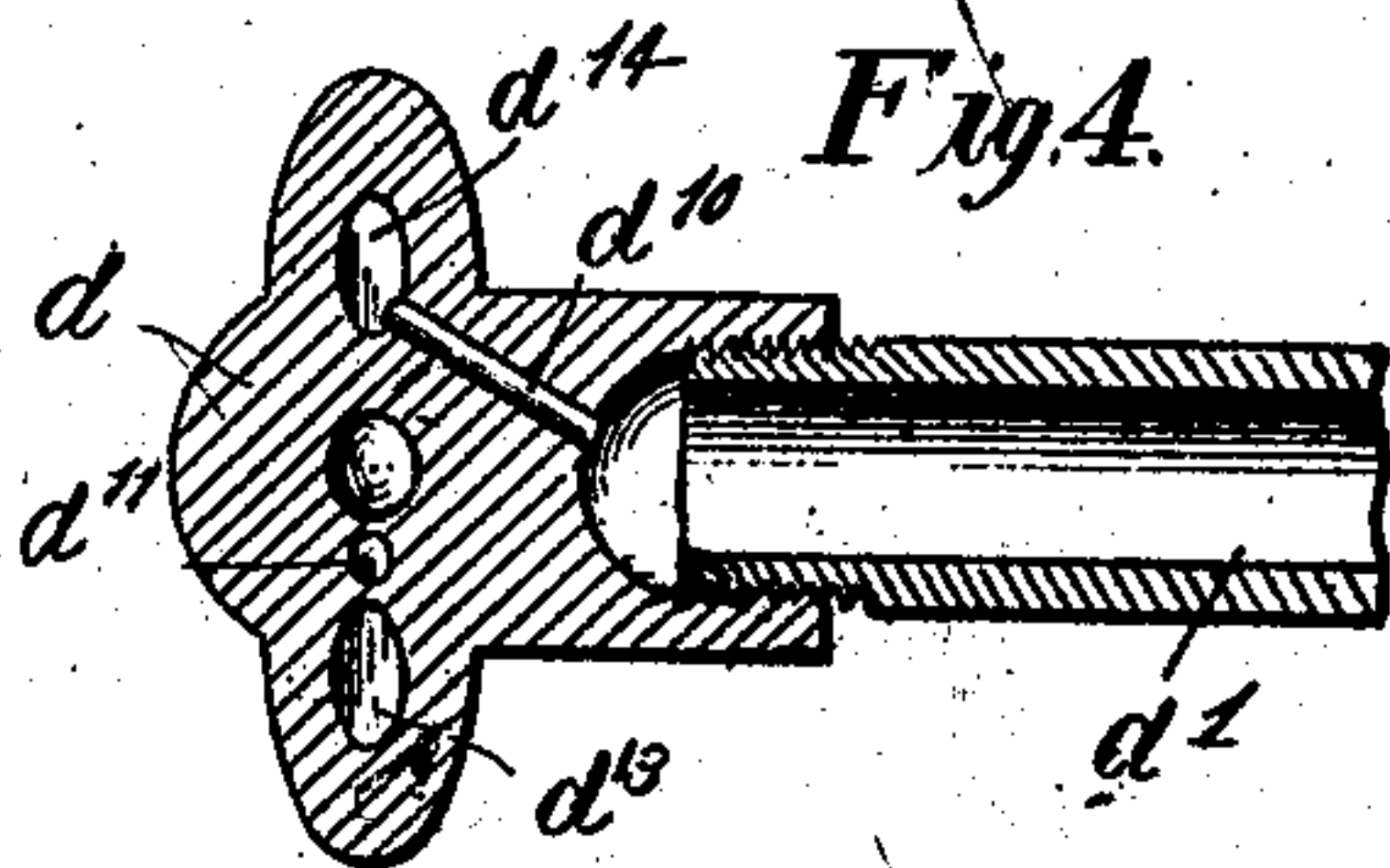


Fig. 4.



Witnesses:

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HYDROCARBON-BURNER.

No. 840,591.

Specification of Letters Patent.

-Patented Jan. 8, 1907.

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To all whom it may concern:

Be it known that I, ELY SPENCER, a citizen of the United States, residing at Jacksonville, in the county of Duval and State of Florida, have invented certain new and useful Improvements in Hydrocarbon - Burners, of which the following is a specification.

This invention relates to improvements in hydrocarbon-burners of that class in which the fluid is converted into an inflammable gas which is mixed with more or less air, and the improvements which form the subject-matter of this application are appreciable particularly to the type of such burners covered by Letters Patent issued to me, Nos. 807,327, and 807,328.

The improvements are especially in the valve connection between the gas-supply pipe and the lighter or initial generation-pipe and in the construction and arrangement of the latter pipe.

From extensive experiments with burners of this character I have found that among the important points to be conserved are economy in the use of fluid for lighting the burner, the generation of gas freely and fully, and the control of the flow by the operator or user, and these points I have aimed to cover in this invention.

In the accompanying drawings, which form a part of this application, Figure 1 is a view, partly in side elevation and partly sectional, of my improved burner. Fig. 2 is a top plan view of same. Fig. 3 is a vertical section, on an enlarged scale, on line 3-3 of Fig. 2. Fig. 4 is a horizontal section, on an enlarged scale, on line 4 of Fig. 1.

Referring to the drawings in detail, *a* represents the burner-base, which is preferably made of cast-iron and recessed in its upper surface to form a pan to catch any fluid that may drop from the lighting-tube *e*, to be described. The base is formed with an extension, to which is bolted the filtering and auxiliary reservoir *b*, which is of the same form as shown in my previous applications mentioned. It is composed of a thin shell or casing which is filled with asbestos wool and is provided with nipples to receive the inlet and outlet pipes. Extending from one side of the reservoir are two double pipe-elbows *b'*, to the outer ends of which are connected pipes *b² b²*, respectively. These pipes are arranged parallel to each other in a horizontal plane and have their outer ends connected with U-shaped pipe-couplings *b³ b³*, which

connect with the outer ends of the burner-pipes *c c*, respectively.

The burners *c c* have transverse slots *c'* cut therein and are filled with asbestos or similar material. The pipes *b²* extend longitudinally of and directly above the center of the burners, so that they lie in the zone of the flames from the latter, and therefore the fluid passing through said pipes on its way from the reservoir *b* to the burners is subjected to the heat of the latter, the advantage of which arrangement is well known.

From the opposite side of the reservoir *b* extends a pipe *d'*, which leads to a valve-casing *d*, which forms a necessary and important feature of my invention.

The valve-casing is formed with a chamber *d¹²*, which communicates with a vertical pipe action *d²* and with a passage *d¹¹*, which leads to a valve-opening *d¹³*. This opening is controlled by a needle-valve *d⁷*, which passes through and has a threaded engagement with the radial branch *d⁵* of the valve-casing, also passes through a suitable stuffing-box on the end of such branch and has a wheel or disk *d⁸* secured to its other end to facilitate the turning of the valve. The valve-casing is also formed with a chamber *d⁹*, which communicates with any suitable source of hydrocarbon-fluid supply, and through the valve-opening *d¹³* and passage *d¹¹* is also in communication with the chamber *d¹²*. From the chamber *d⁹* leads a valve-opening *d¹⁴*, which is controlled by a needle-valve *d⁸*, which passes through and has threaded engagement with the radial branch *d⁶* of the valve-casing and is supplied with a disk *d⁴* on its outer end. The valve-opening *d¹⁴* communicates with the pipe *d'* through a passage *d¹⁰*.

The vertical pipe *d²*, which leads from the valve-casing, communicates through a suitable elbow-coupling with the lighting or generating pipe *e*, which extends over the auxiliary reservoir *b* and over the pipes *b²* and has its outer end closed. Openings *e'* are provided in the under side of the pipe *e*, from which the fluid escapes when the valve *d⁷* is opened.

From the construction described it will be seen that with the valve *d⁸* closed and the valve *d⁷* open fluid entering the chamber *d⁹* under pressure from a suitable source of supply will pass up through the chamber *d¹³*, passage *d¹¹*, to chamber *d¹²*, from which it will pass through pipe *d²* to the pipe *e*, from which it will be sprayed through the holes *e'* upon

the surface of the burners. Upon lighting the fluid the flames will envelop the pipes b^2 , thus heating them in a comparatively short time. The valve d^7 will then be closed and valve d^8 opened, which will allow the fluid to pass from chamber d^9 through passage d^{10} to pipe d^7 , and so through reservoir b to pipes b^2 , which being heated will quickly generate gas, and this will pass to the burners c , where it will be consumed in the usual manner. As the igniting-tube remains in the zone of the flames from the burner, it is kept hot, so that if the burners should be shut off temporarily the retained heat of the tube would facilitate the relighting of the burners.

Having thus described my invention, what I claim as new is—

1. In a hydrocarbon-burner, the combination of horizontally-arranged tubular burners, an auxiliary fluid-supply reservoir arranged adjacent to one end of said burners, fluid-supply pipes connected with said reservoir, passing over said burners and connected with the outer end of the latter, means for supplying fluid to said reservoir, and means for lighting said burners, said means arranged above and parallel with said burners.

2. In a hydrocarbon-burner, the combination of parallel horizontally-arranged slotted tubular burners, an auxiliary fluid-supply reservoir arranged adjacent to one end of

said burners, fluid-supply pipes connected with said reservoir, passing over said burners and connected with the other end of the latter, means for supplying fluid to said reservoir, and means for lighting said burners, consisting of a pipe communicating with the fluid-supply and extending longitudinally of said burners, said pipe having holes in its under side, means for controlling the supply of fluid to said pipe and means for controlling the supply of fluid to said reservoir.

3. In a hydrocarbon-burner, the combination of horizontally-arranged slotted tubular burners, an auxiliary fluid-supply reservoir, pipes respectively connected with said reservoir and said burners, a fluid-supply pipe leading to said reservoir, a perforated lighter or igniting-pipe arranged longitudinally of said burners and above same, means for conducting fluid to said reservoir supply-pipe and said igniting-pipe respectively, said means comprising a valve-casing having independent passages communicating with said pipes and with a fluid-supply chamber in said casing, and valves controlling said passages, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

ELY SPENCER.

Witnesses:

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